

WHAT IS CLAIMED IS:

1. A method for treating tissue using ultrasonic energy comprising the steps of:
applying a medicament to tissue; and
delivering ultrasonic energy from a non-contact distance from the tissue to the medicament and to the tissue, wherein the ultrasonic energy has intensity capable of penetrating the wound tissue to a beneficial depth to provide a therapeutic effect to the tissue, and of sonicating the medicament for causing the medicament to penetrate the tissue to a beneficial depth to provide a therapeutic effect to the tissue.
2. The method according to Claim 1, wherein the ultrasonic energy has an intensity capable of penetrating the tissue to a beneficial depth to provide a therapeutic effect to the tissue.
3. The method according to Claim 1, further including the step of generating the ultrasonic energy with a particular amplitude indicative of an intensity capable of achieving the therapeutic effect.
4. The method according to Claim 3, further including the step of generating the ultrasonic energy with a frequency capable of achieving the particular amplitude.
5. The method according to Claim 3, wherein the particular amplitude is at least 3 microns.
6. The method according to Claim 1, wherein the ultrasonic energy is delivered simultaneously with delivery of a spray to the tissue.
7. The method according to Claim 1, wherein the ultrasonic energy is delivered through a substantial expanse of a substantially purely gaseous medium including air to the tissue.

8. The method according to Claim 3, wherein the particular amplitude is at least 10 microns.

9. The method according to Claim 4, wherein the frequency is in the range of 20kHz-5MHz.

10. The method according to Claim 4, wherein the frequency is in the range of 20-200kHz.

11. The method according to Claim 4, wherein the frequency is in the range of 20-40kHz.

12. The method according to Claim 1, wherein the applying step is performed prior to the delivery step.

13. The method according to Claim 1, wherein the applying step is performed during the delivering step.

14. The method according to Claim 1, wherein the steps of the method are included in a series of treatments wherein another treatment of the series of treatments is selected from the group consisting of:

the treatment including the steps of delivering ultrasonic energy from a non-contact distance to the tissue simultaneous with delivery of a spray to the tissue, wherein the ultrasonic energy has an intensity capable of penetrating the tissue to a beneficial depth to provide a therapeutic effect to the tissue and sonicating the spray for causing the spray to penetrate the tissue to a beneficial depth to provide a therapeutic effect to the tissue;

the treatment including the steps of delivering ultrasonic energy from a non-contact distance to the tissue through a substantial expanse of a substantially purely gaseous medium to the tissue, wherein the ultrasonic energy has an intensity capable of penetrating the tissue to a beneficial depth to provide a therapeutic effect to the tissue; and the treatment including the steps of the method of the invention, wherein a different medicament is applied.

15. The method according to Claim 1, wherein the medicament is selected from the group consisting of: an antibiotic, an ointment, cream, gel, liquid, salve, oil, saline solution, distilled, non-distilled and/or boiled water, powder, spray, antibacterial agent, antiseptic agent, insulin, analgesic agent, conditioner, surfactant, emollient, or other active ingredient.

16. The method according to Claim 1, wherein the step of delivering includes the step of providing means for delivering the ultrasonic energy at a distance from 2.5mm-51cm from the tissue.

17. The method according to Claim 1, wherein the therapeutic effect is selected from the group consisting of increasing blood flow to the tissue, providing a local anesthetic effect and stimulating cell growth.

18. An apparatus for treating tissue comprising:
a generator and a transducer for generating ultrasonic energy;
wherein the transducer delivers the ultrasonic energy to the tissue and to a medicament applied to the tissue from a non-contact distance from the tissue; and
wherein the generated ultrasonic energy has an intensity capable of applying acoustic pressure and penetrating the wound tissue to a beneficial depth to provide a therapeutic effect to the tissue, and of sonicating the medicament for causing the medicament to penetrate the tissue to a beneficial depth to provide a therapeutic effect to the tissue.

19. The apparatus according to Claim 18, wherein the generator and transducer generate the ultrasonic energy with a particular amplitude indicative of an intensity capable of achieving the therapeutic effect.

20. The apparatus according to Claim 19, wherein the generator and transducer further generates the ultrasonic energy with a frequency capable of achieving the particular amplitude.

21. The apparatus according to Claim 19, wherein the particular amplitude is at least 10 microns.
22. The apparatus according to Claim 20, wherein the frequency is in the range of 20kHz-5MHz.
23. The apparatus according to Claim 20, wherein the frequency is in the range of 20-200kHz.
24. The apparatus according to Claim 20, wherein the frequency is in the range of 20-40kHz.
25. The apparatus according to Claim 18, wherein the transducer includes a radiation surface having a surface area dimensioned for achieving delivery of the ultrasonic energy to the tissue with an intensity capable of achieving the therapeutic effect.
26. The apparatus according to Claim 18, wherein the transducer includes a radiation surface having at least one of a rounded and rectangular perimeter for achieving delivery of the ultrasonic energy to the tissue with an intensity capable of achieving the therapeutic effect.
27. The apparatus according to Claim 18, wherein the transducer includes a radiation surface; and a selection is made of at least one of a size of a surface area of the radiation surface, a shape of a peripheral boundary of the radiation surface, a frequency of the generated ultrasonic energy, and an amplitude of the generated ultrasonic energy for achieving delivery of ultrasonic energy to the tissue with an intensity capable of achieving the therapeutic effect.
28. The apparatus according to Claim 18, wherein the transducer includes a radiation surface; and a selection is made of a combination of a size of a surface area of the radiation surface, a shape of a peripheral boundary of the radiation surface, a shape of the curvature of the radiation surface selected from one of flat, concave, convex and a combination thereof, a frequency of the generated ultrasonic energy, and an amplitude of the generated ultrasonic

energy for achieving delivery of ultrasonic energy to the tissue with an intensity capable of achieving the therapeutic effect.

29. The apparatus according to Claim 18, wherein a radiation surface of the transducer is positioned from 2.5mm to 51cm from the tissue.

30. The apparatus according to Claim 18, wherein the transducer is driven by a constant or modulated frequency and wherein the driving wave form of the transducer is selected from the group consisting of sinusoidal, rectangular, trapezoidal and triangular wave forms.

31. The apparatus according to Claim 18, wherein the therapeutic effect is selected from the group consisting of increasing blood flow to the tissue, providing a local anesthetic affect and stimulating cell growth.

32. The apparatus according to Claim 18, wherein the ultrasonic energy is delivered simultaneously with delivery of a spray to the tissue.

33. The apparatus according to Claim 18, wherein the ultrasonic energy is delivered through a substantial expanse of a substantially purely gaseous medium to the tissue.

34. The apparatus according to Claim 18, wherein the medicament is applied to the tissue prior to sonication of the medicament.

35. The apparatus according to Claim 18, wherein the medicament is applied during delivery of the ultrasonic energy.

36. The apparatus according to Claim 18, wherein the medicament is selected from the group consisting of: an ointment, cream, gel, liquid, salve, oil, saline solution, powder, spray, antibacterial agent, antiseptic agent, insulin, analgesic agent, conditioner, surfactant, emollient, or other active ingredient.